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| EXAMINER | |
|---|---|
| ROSARIO, DENNIS | |
| **ART UNIT** | **PAPER NUMBER** |
| 2624 | |

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/981,820 | ONNO, PATRICE | |
| | Examiner | Art Unit | |
| | Dennis Rosario | 2624 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-41* is/are rejected.

7)☒ Claim(s) *10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 October 2001 and 2/27/2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. The amendment was received on 8/25/2006. Claims 1-41 are pending.

### *Response to Arguments*

2. Applicant's arguments, see amendment, pages 17,18, filed 8/25/2006, with respect to 102(b) under Silva et al. (IEEE article: Variable Block Size Wavelet Video Coding) have been fully considered and are persuasive. The rejection of claim 3 has been withdrawn.

3. Applicant's arguments, see amendment, pages 18,19, filed 8/25/2006, with respect to 102(e) under Chiang et al. (US Patent 6,084,908 A) have been fully considered and are persuasive. The rejection of claim 3 has been withdrawn.

4. Applicant's arguments, see amendment, pages 19,20, filed 8/25/2006, with respect to the rejection(s) of claim 3 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kolesnik et al. (US Patent 6,249,614 B1) as a new interpretation and Fukuhara et al. (US Patent 6,658,158 B2).

5. Applicant's arguments, see amendment, pages 21-23, filed 8/25/2006, with respect to the rejection(s) of claim 1 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Dekel et al. (US Patent 6,314,452 B1) as a new interpretation.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> ((e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1,2,19 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Dekel et al. (US Patent 6,314,452 B1).

Regarding claims 1 and 19, Dekel et al. discloses a method of processing a coded digital signal including a set of different types obtained by coding a set of original samples representing physical quantities, and including a set of information (during preprocessing of an image in fig. 2, num. 202) representing original samples and parameters used during the coding, said method including the steps of:

a) means for (fig. 2,num. 203) determining a subset of samples (or region of interest in fig. 2,num. 203) corresponding to a selected part of the original digital signal using the set of information;

b) means for (via a "transform" in col. 6, line 60) obtaining a number of samples ("$32^2$ coefficients" in col. 6, line 12 for each subband as shown in fig. 3) of at least one predetermined type ("resolution" in col., line 67) and which are contained in the determined subset of samples; and

c) means for deciding ("TABLE 3" in col. 9, line 47 contains parameters that are set to "false" or "true" as shown in TABLE 3 and in col. 12, lines 22 and 24,respectively.) whether or not to modify (or "update" in col. 15, line 8 based on the true or false parameters) the determined subset of samples according to the obtained number of samples of the at least one predetermined type and according to a required level of quality (via TABLE 3 that is a function of "high quality" in col. 9, line 53 and "low quality" in col. 9, line 54), before restoring the selected part of the original signal (Since TABLE 3 corresponds to an "input" in col. 9, line 45 of inputting a high quality or low quality setting on the encoding side).

d) means for (fig. 2,num. 205) restoring the selected part of the original signal,

e) said means of deciding ("TABLE 3" in col. 9, line 47) being adapted (with the encoder "algorithm" in col. 9, line 45) to make a decision with regard to a modification of the determined subset of samples before said means of restoring (fig. 2,num. 205) restore the selected part of the original signal (Note, that the update operation occurs after the decoding, but the decision to modify or update happens before the decoding. Thus, a means for modifying that happens before the claimed restoring will overcome the examiners interpretation.).

Regarding claim 2, Dekel et al. discloses the method according to claim 1, which said determining, obtaining, and deciding steps are effected on reception of a request (fig. 8, num. 802: DECODE ROI REQUEST STREAM is a step where a server receives a request which causes said determining, obtaining, and deciding steps.) to obtain the part of the coded digital signal.

Regarding claim 33, Dekel et al. discloses the device according to claim 19, wherein said means for determining, said means for obtaining, and said means for deciding, are incorporated in:

a) a microprocessor ("microprocessor" in col. 4, line 5),

b) a read only memory ("cache" in col. 4, line 6) containing a program for processing the coded digital signal, and

c) a random access memory ("disk" in col. 4, line 8) containing registers adapted to record variables modified during the execution of said program.

8. Claims 3-7,9,11,12,14-18,20-32 and 34-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolesnik et al. (US Patent 6,249,614 B1).

Regarding claims 3 and 20, Kolesnik et al. discloses a method of processing a coded digital signal including a set of samples obtained by coding a set of original samples representing physical quantities using a multiresolution coding format, and including a set of information relating to a size w,h, of the set of original samples and its resolution res, comprising the steps of:

a) means for(fig. 8, num. 830) locating a subset of original samples (or "locate...sub-matrices" in col. 9, lines 41,42 as shown in figure 4 labels QUANTIZED SUBMATRIX, ZERO SUBMATRIX (shown two times)) given:

a1) size zulx,zuly,zh,zw (as shown by the size of the image of fig. 2A) and

a2) resolution zres (as shown by the size of the image of fig. 2A) in the set of original samples (fig. 2A)

b) according to:

b1) the set of information on relating to the size w,h (as shown by the size of the image of fig. 2A) and

b2) the resolution res of this set (as shown by the size of the image of fig. 2A);

c) means for (fig. 9, num. 920) determining, amongst coefficients of a low-frequency sub-band $LL_0$ of a last decomposition level obtained by decomposition into frequency sub-bands of the set of original samples (as done in figures 2A thru 2D),

c1) a number of coefficients (or "number of...coefficients" in col. 11, lines 12,13) per dimension (via "height or width" in col. 12, line 17) of the signal which correspond to the located subset; and

d) means for (fig. 13,num. 1310) deciding, at the decoding side (as represented in fig. 13), whether or not to modify the size of the located subset (using the technique of fig. 9,num. 940 since fig. 13,num. 1310 can use the "same" in col. 14, line 3 technique of fig. 9,num. 940) according to the determined number of low-frequency sub-band coefficients (as determined in fig. 9, num. 920) before restoring the located subset (as is done in fig. 13,num. 1370); and

e) means for restoring (fig. 9,num. 150) the located subset. said means for deciding being adapted to make a decision with regard to a modification of the size of the located subset before said means for restoring restore the located subset.

Regarding claim 4, Kolesnik et al. discloses the method according to claim 3, in which said decision step includes taking into account at least one predetermined criterion (fig. 9, num. 930) representing a required quality level for the restoration of the subset of original samples of the digital signal.

Regarding claim 5, Kolesnik et al. discloses a method according to claim 3, in which said decision step includes taking into account at least one predetermined criterion representing a compromise between a required quality level (or the amount of processing as shown in the horizontal axis of fig. 3A) for the restoration of the subset of original samples and a speed (or time as shown in the vertical axis of fig. 3A) of processing for restoring the subset of original samples.

Claims 6 and 9 are rejected the same as claim 3, step d. Thus, argument similar to that presented above for claim 3, step d is equally applicable to claims 6 and 9.

Regarding claim 7, Kolesnik et al. discloses the method according to claim 6, in which the modification lies in an increase in the size (by "collect[ing]" in col. 14, line 44 other "sub-matrices" in col. 14, line 44 as shown in fig. 4 that shows a plurality of sub-matrices that can be collect to form a quantized coefficient matrix.) of the located subset of original samples.

Regarding claim 11, Kolesnik et al. discloses the method according to claim 3, in which said decision step results in a preservation of the size the size of the located subset of original samples (figure 10,num. 1030 determines a size of the sub-matrix as done in fig. 9,num. 920 for later processing in fig. 9, num. 930).

Regarding claim 12, Kolesnik et al. discloses the method according to claim 3, further comprising:

a) the step of increasing the size of the located subset of original samples (by "collect[ing]" in col. 14, line 44 other "sub-matrices" in col. 14, line 44 as shown in fig. 4 that shows a plurality of sub-matrices that can be collect to form a quantized coefficient matrix.) which does not change the number of coefficients of the low-frequency sub-band corresponding to the subset (since the collecting operation corresponds "ALL COEFFICIENT MATRICES COLLECTED" in fig. 13, num. 1365; thus all of the determined number of coefficients are collected).

Claim 14 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 14 except for the additional limitation as disclosed in Kolesnik et al. of:

a) the set of original samples of the digital signal is separated into several zones (as shown in fig. 4, labels: ZERO SUBMATRIX (shown twice) and a QUANTIZED SUBMATRIX).

Regarding claim 15, Kolesnik et al. discloses the method according to claim 3, in which the coded digital signal includes blocks of samples (as shown in the middle 4 blocks labeled: EXEMPLARY QUANTIZED COEFFICENT MATRICES of fig. 4) which have been coded independently (as shown in the bottom four block of fig. 4, labeled: EXEMPLARY CODED QUANTIZED COEFFICIENT MATRICES where each matrices is coded as either a SPARSE MATRIX or ZERO MATRIX or DENSE MATRIX).

Claim 16 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 16 except for the additional limitation as disclosed in Kolesnik et al. of said decoding method comprises the steps of:

a) extracting the samples from the coded digital signal (fig. 13, num. 1305) corresponding to the located subset of the original samples having a size which has possibly been modified;

b) entropic decoding (fig. 13, num. 1325) of these samples;

c) dequantization (fig. 13, num. 1355) of the previously decoded samples;

d) reverse transformation (fig. 13, num. 1365) of the decomposition into frequency sub-bands on the previously dequantized samples; and

e) restoration (fig. 13, num. 1370) of the located subset of samples.

Claim 17 is rejected the same as claim 16, step a. Thus, argument similar to that presented above for claim16, step a is equally applicable to claim 17.

Regarding claim 18, Kolesnik et al. discloses the method according to claim 16, in which the digital signal is an image signal, the samples of the image being arranged to constitute the rows and columns (via a matrix array as shown in fig. 2C that shows columns (HH,HL), (LH,LL) and rows (HH, LH), (HL,LL)) of the image.

Claims 21-29 are rejected the same as claims 4-15,respectively. Thus, argument similar to that presented above for claims 4-15 is equally applicable to claims 21-29, respectively.

Claims 30 is rejected the same as claims 3 and 16. Thus, argument similar to that presented above for claims 3 and 16 is equally applicable to claim 30.

Claims 31 and 32 are rejected the same as claims 17 and 18. Thus, argument similar to that presented above for claims 17 and 18 is equally applicable to claims 31 and 32, respectively.

Regarding claim 34, Kolesnik et al. discloses the device according to claim 20, wherein said means for locating, said means for determining, and said means for deciding are incorporated in:

a) a microprocessor (fig. 14, num. 1405),

b) a read only memory containing a program for processing the coded digital signal (fig. 14,num. 1410), and

c) a random access memory (fig. 14, num. 1450) containing registers adapted to record variables modified during the execution of said program.

Claims 35-41 are rejected the same as claim 34. Thus, argument similar to that presented above for claim 34 is equally applicable to claims 35-41.

9. Claims 3,6-9 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukuhara et al. (US Patent 6,658,158 B2).

Regarding claim 3, Fukuhara et al. discloses a method of processing a coded digital signal including a set of samples obtained by coding a set of original samples representing physical quantities using a multiresolution coding format, and including a set of information relating to a size w,h, of the set of original samples and its resolution res, comprising the steps of:

a) locating a subset (or "certain tile" in col. 9, line 41 that has a "position" in col.9, line 43) of original samples (since the certain tile originated or is of original samples or tiles as shown in fig. 9B) given:

a1) size zulx,zuly,zh,zw (that is "set" in col. 7, line 5) and

a2) resolution zres (or "tile area" in col. 7, line 66 that corresponds to "64X64" in col. 7, line 5) in the set of original samples (as shown in fig. 9B)

b) according to:

b1) the set of information (fig. 12) on relating to the size w,h and the resolution res of this set (or "tile information" in col. 9, line 32 that is interpreted to include said set and tile area);

c) determining, amongst coefficients of a low-frequency sub-band $LL_0$ (as shown in fig. 16A in the upper left square LL) of a last decomposition level obtained by decomposition into frequency sub-bands of the set of original samples,

c1) a number of coefficients per dimension (or six coefficients as represented in fig. 7, labels abcdef. Note, that Fukuhara states that the number of...coefficients...is ...as many as the number of pixels in the tile picture" in col. 8, lines 3-5. Thus, fig. 7 shows six pixels, abcdef, that are equal to six coefficients in the horizontal dimension corresponding to one the arrows in the upper left square,LL, of fig. 16B) of the signal which correspond to the located subset; and

d) deciding, at the decoding side (represented in fig. 16A-D), whether or not to modify the size of the located subset (The examiner interprets the claimed limitation of "whether or not to modify the size" as an option that exists to modify and not to modify **inclusive (emphasis added)** of each other due to the word "whether" that implies two available options or outcomes: Fukuhara et al. states, "expansion is effected...in an area outside the tile up to an area RF..." in col. 7, lines 56,57 which is interpreted using fig. 7 that expansion is performed on the tile as shown in fig. 7, label: $R_T$ where the letter d in fig. 7 is an expansion of the tile and extends up to the letter f where expansion no longer occurs since letter f is at the upper limit of area RF. Thus, the option for expansion and not to expand, which corresponds to the claimed whether or not to modify the size, exists at letter f however since letter f is at the upper limit of area RF expansion does not occur. If the word "whether" was not in claim 3, the examiner would have interpreted the last limitation of deciding as an **exclusive (emphasis added)** "or" limitation.) according to the determined number of low-frequency sub-band coefficients before restoring the located subset.

Regarding claim 6, Fukuhara et al. discloses the method according to claim 3, further comprising:

a) the step of modifying the size (fig. 16B) of the located subset (or "certain tile" in col. 9, line 41 that has a "position" in col.9, line 43) of original samples.

Regarding claim 7, Fukuhara et al. discloses the method according to claim 6, in which the modification lies in an increase (or "extension" as shown in fig. 16B) in the size of the subset of original samples.

Regarding claim 8, Fukuhara et al. discloses the method according to claim 7, in which by representing, in a space of dimensions corresponding to the dimensions of the digital signal,

a) a position of the coefficients (as shown in the upper left corner, LL,HL,LH,HH, of fig. 16A) of the low-frequency sub-band of the last decomposition level and

b) a position (as shown in fig. 8, label $G_{Head}$) of the subset of original samples delimited by a boundary (fig. 8, label $R_T$),

c) the increase in the size of the subset consists of moving the boundary (as shown in fig. 7 and fig. 16B) so as to add to the subset at least one coefficient of the low-frequency sub-band per dimension of the digital signal, the at least one added coefficient being situated close to the boundary before the movement thereof.

Regarding claim 9, Fukuhara et al. discloses the method according to claim 6, in which the modification lies in a reduction (as shown by the shaded square in fig. 9F relative to any one of the shaded squares of fig. 9D) in the size of the subset (or "certain tile" in col. 9, line 41 represented in the wavelet domain as shown in fig. 16A, labels LL,HL,LH and HH that forms one tile as shown by any one of the four tiles in fig. 16C).

Claim 13 is rejected the same as claim 8. Thus, argument similar to that presented above for claim 8 is equally applicable to claim 13.

***Allowable Subject Matter***

10. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is an examiner's statement of reasons for allowance:

Claim 10 is allowable over the prior art, because the prior art does not teach within the environment of claim 10 the claimed moving the boundary so as to remove part of the subset and all the frequency sub-band coefficients situated in the part of the substrate.

The closest prior art Chiang et al. (US Patent 6,084,908 A) teaches a reduction of size or splitting of a subset as shown in fig. 3,num. 320 relative to a corresponding section in fig. 9;thus changing the boundaries. However, as applicant's have properly pointed out the spitting operation occurs on the encoder side and not in the claimed decoder side.

Another prior art, Fukuhara et al. teaches a decoder that expands as shown in fig. 16B; however, there is no disclosure or suggestion of the claimed reduction.

Another prior art, Atsumi (PCT Application No.: PCT/US98/19065) teaches a decoder in fig. 12 that has an ROI COEFFICIENT IDENTIFICATION 1203 and illustrated in fig. 9 that **forms (emphasis added)** a border as shown by the LL HL LH and HH components that are reduced or decimated in size relative to the REGION OF INTEREST image in fig. 9; however, Atsumi does not teach the claimed moving the boundary so as to remove part of the subset and all the frequency sub-band coefficients situated in the part of the substrate.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Atsumi (PCT Application No.: PCT/US98/19065) is pertinent as teaching a method of dividing sub-categories "Based on [a] number of pixels to which each identified coefficient corresponds" in page 30, lines 22-24 and fidelity or the claimed required quality. This reference is applicable to claim 1.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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